

**Notice of Allowability**

Application No.

09/992,909

Examiner

TUAN A. PHAM

Applicant(s)

BRIAN MINNIS; PAUL MOORE

Art Unit

2643

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 1-17-2005.
2. ☒ The allowed claim(s) is/are 1-10.
3. ☒ The drawings filed on 1-5-2001 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
  - \* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

## **DETAILED ACTION**

### **EXAMINER'S AMENDMENT**

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.
2. Authorization for this examiner's amendment was given in a telephone interview with Attorney of record Aaron Waxler on 05-27-2005.
3. The application has been amended as follows:  
Claim 11 has been canceled.

**(End of Amendment)**

### **REASONS FOR ALLOWANCE**

4. Claims 1-10 are allowed over the prior art of record.
5. The following is an examiner's statement of reasons for allowance:  
McGeehan et al. (U.S. Patent No.: 5,950,119, hereinafter, "McGeehan") teaches a radio receiver (see figure 6, receiver 198) comprising an input for a radio frequency signal (see figure 1, input RF at splitter 10, col.1, ln.50), quadrature down-conversion

means for translating the radio frequency signal to an intermediate frequency and for generating in-phase and quadrature versions of the intermediate frequency signal (see figure 1, mixer 4 is generating in-phase, mixer 6 is generating quadrature, col.1, ln.40-67).

Liu (U.S. Patent No.: 6,778,594) teaches a radio receiver comprises a polyphase filtering means for operating on the in-phase and quadrature signals to provide filtered in-phase and quadrature signals (see figure 2, mixer 13, 14, polyphase filter 33, col.6, ln.1-10).

Ishii (U.S. Patent No.: 5,822,704) teaches a dual mode radio receiver comprises in-phase (I) and quadrature (Q) signals. These I and Q signals are respectively digitized by two analogs to digital converters which in turn produce I and Q digital data (see figure 1, mixer 36, 38, A/D 44, A/D 46).

Snell (U.S. Patent No.: 5,982,807) teaches a high rate data receiver comprises in-phase (I) and quadrature (Q) signals. These I and Q signals are respectively digitized by two analogs to digital converters, which in turn produce I and Q digital data.

However, the prior art made of record, alone or in combination, fails to clearly teach or fairly suggest a radio receiver operable in a zero-IF and a low-IF mode. The radio receiver comprises a means responsive to the receiver operating in the low-IF mode are provided for disabling operation of one of the first and second analogue-to-digital conversion means, low-IF digital signal processing means are provided for operating on a single digitised signal to generate decoded digital output data in the low-IF mode and zero-IF digital signal processing means are provided for operating on in-

phase and quadrature digitised signals to generate decoded digital output data in the zero-IF mode, in combination with other limitations, as specified in the independent claim 1, and further limitations of their respective dependent claims 2-10.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Tuan A. Pham** whose telephone number is (571) 272-8097. The examiner can normally be reached on Monday through Friday, 8:00 AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Curtis Kuntz can be reached on (571) 272-7499 and

**IF PAPER HAS BEEN MISSED FROM THIS OFFICIAL ACTION PACKAGE, PLEASE CALL Customer Service at (571) 272-7499 FOR THE SUBSTITUTIONS OR COPIES.**


Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

Art Unit: 2643

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have question on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Art Unit 2643  
May 21, 2005  
Examiner

Tuan Pham



HUYEN LE  
PRIMARY EXAMINER